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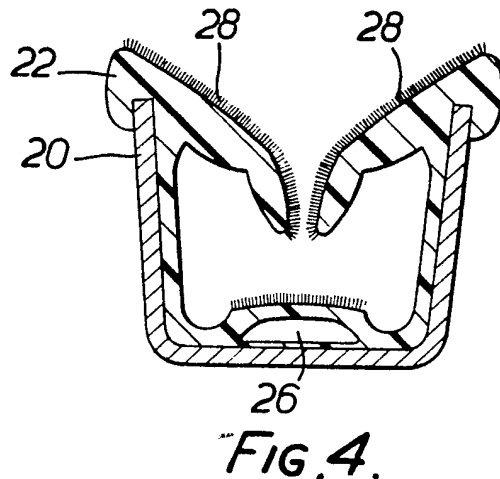
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(54) Window glass sealing or guiding arrangements

(57) A window channel for mounting below the waist of a vehicle body door comprises a stiff unapertured aluminium channel 20 having bonded its inside surface covered with extruded plastics or rubber material 22 carrying flock 28. A small portion of the material 22 is peeled off at each end, and a clip is formed on the exposed metal 20 for attaching that end to the above-waist window channel. At the other end, a monitoring bracket is attached to the exposed metal 20 for supporting that end from the inner skin of the door.



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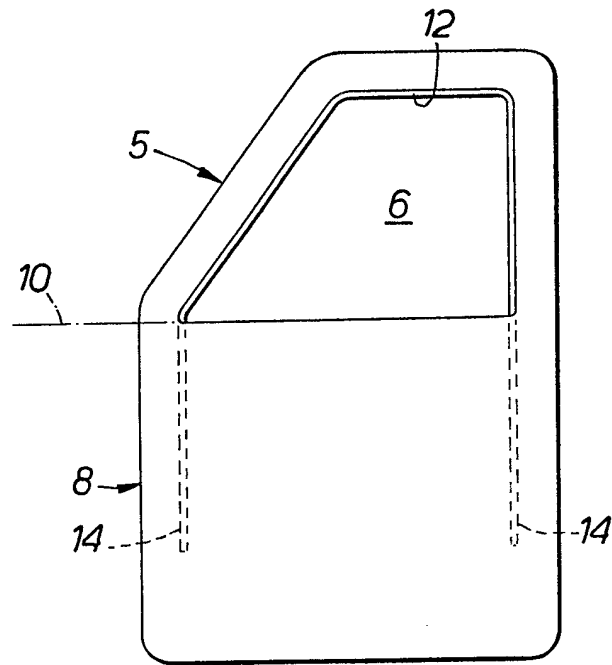


FIG. 1.

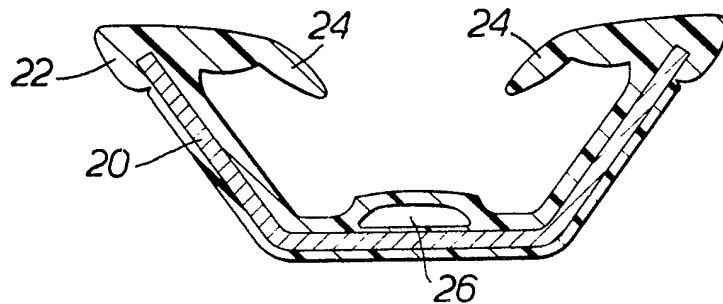


FIG. 2.

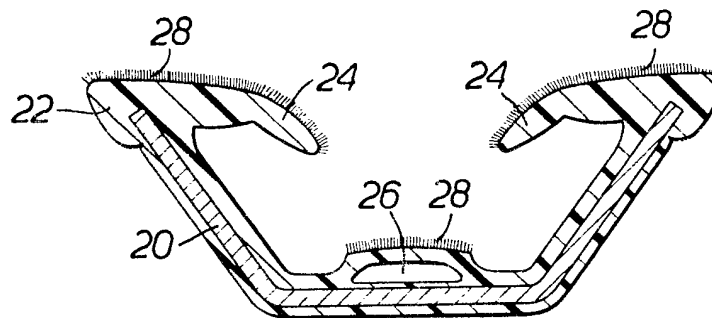


FIG. 3.

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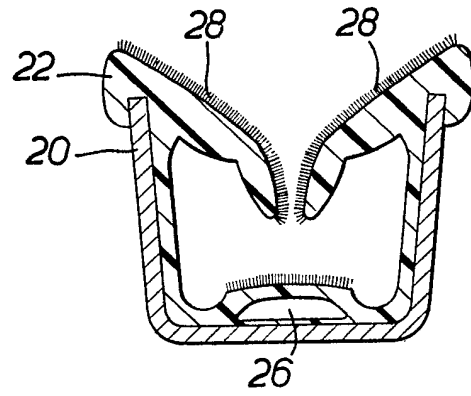


FIG. 4.

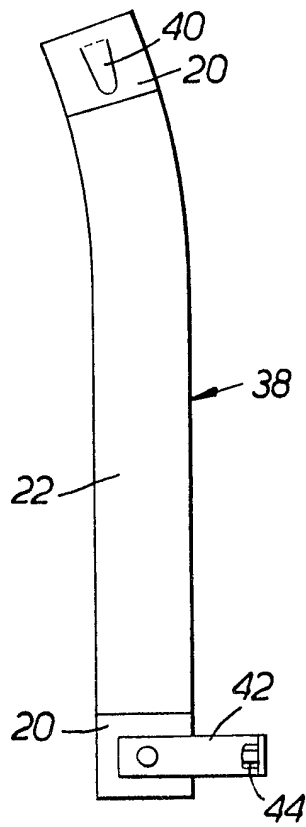


FIG. 5.

SPECIFICATION

Improvements in and relating to window glass sealing or guiding arrangements

The invention relates to windows and to seals therefor such as for sealing a window glass and/or guiding a movable window glass.

Various novel features of the invention will be apparent from the following description, given by way of example only, of a window sealing or guiding channel embodying the invention, and of methods according to the invention of making such a channel, reference being made to the accompanying diagrammatic drawings in which:

Figure 1 is a diagrammatic side view of a motor vehicle body door on which is mounted the window sealing or guiding channel;

Figure 2 is a diagrammatic cross-section through the channel at a relatively early stage in its manufacture;

Figure 3 is a view corresponding to Fig. 2 but showing the channel at a later stage in its manufacture;

Figure 4 is a cross-section through the channel at a final stage in its manufacture; and

Figure 5 is a side view of a length of the channel showing mounting fixtures thereon.

More specifically to be described below is a window sealing or guiding channel comprising a stiff metal channel having soft resilient material bonded to its inside surface, and means for rigidly mounting the metal channel in a window glass receiving position.

Advantageously, the stiff metal channel is an unapertured channel of a light metal such as aluminium.

In a case where the channel is for mounting below the waist level of a vehicle body door, the metal channel advantageously carries at each of its ends mounting means for rigidly mounting it in position. For example, the mounting means at one of its ends may be in the form of clip means for clipping the metal channel to a window channel above the waist level of the door, and the mounting means at the other end of the metal channel may comprise a bracket for attaching that end of the channel to the vehicle door skin.

There will also be more specifically described below a method of making a window sealing and guiding channel, comprising the steps of forming a blank of unapertured metal into a shallow channel having a substantially flat base and sides each inclined upwardly therefrom at an obtuse angle thereto, extruding plastics or rubber material at least over the inside surface of the shallow channel so formed and over the distal edges of the sides thereof and so as to define integral longitudinal lips extending inwardly of the channel, applying flock or the like to the outer surfaces of the lips and to at least a portion of the

plastics or rubber material along the base of the channel, and bending the metal sides of the channel towards each other so as to bring each of them substantially into 90 degrees relationship with the base thereof.

If desired, the extrusion step may involve completely covering the metal with the extruded plastics or rubber material, and in such a case the method may include the step of removing the plastics or rubber material from the outside of the base of the channel and the outside of each wall thereof except in the region of each distal edge.

Advantageously, the method includes the step of extruding the plastics or rubber material so as to produce a hollow cavity running along the base of the channel.

The foregoing are exemplary and not exhaustive of the various novel features of the sealing and mounting channels, and methods of making them, now to be more specifically described.

Fig. 1 shows a side elevation of a vehicle body door having an upper portion 5 defining the window opening 6, and a lower, enclosed, portion 8, these being separated by the so-called waist 10 of the door. Around the periphery of the opening 6, except along the horizontal waist 10, a glass guiding and sealing channel 12 is mounted. This is of known form and is mounted so that its open mouth faces towards the centre of the opening 6. It may comprise a plastics or rubber material channel, possibly having its inside surface covered with flock or the like, mounted in a stiff metal channel. The window glass is located in the plastics or rubber which thus provides a weather seal.

Assuming that the window glass is to be capable of being raised and lowered, it is necessary to provide window glass guide channels below the waist level 10, that is, inside the enclosed part of the door 8, so as to guide the window glass as it is lowered into the door.

Two such channels are shown dotted at 14. It is known to construct each such window channel 14 in the form of two parts: a relatively rigid metal channel which is attached to its upper end to the lower end of the channel 12 and which is attached at its lower end to the inner skin of the vehicle door; and a plastics or rubber channel of suitable cross-section pushed into position inside each such metal channel so as to be located therein either by its own resilience or by this in combination with adhesive or the like. Such arrangements are unsatisfactory because each window channel requires the assembly of two parts, the metal channel and the plastics or rubber insert, and each such assembly is relatively heavy.

In producing a window channel embodying the invention, a shallow channel 20 (Fig. 2) is formed from a blank of unapertured alumi-

nium. A bonding agent is applied to the metal which is then passed through a cross-head extruder so as to cover it with plastics or rubber material 22, the material 22 defining inwardly directed lips 24 and a hollow cavity 26 in the base.

after extrusion, flock 28 is applied as shown in Fig. 3 to the outside surface of the lips 24 and to the material 22 running along the base of the channel.

The channel is then passed through rollers so configured as to bend the sides of the metal 20 more nearly into positions at right angles to the base so as to produce the shape shown in Fig. 4. It will be appreciated that the channel has to be formed initially in the shallow form of Figs. 2 and 3 to enable the flocking to be properly carried out.

Fig. 4 shows that the material 22 on the outside of the metal 20 has been stripped off. If desired, the extrusion step can be arranged so that no material 22 is in fact extruded on the outside of the metal 20, except in the regions of the distal edges of the metal sides.

The channel so formed is then cut into suitable lengths 38 (Fig. 5) (to suit the lengths of channel 14, Fig. 1).

A short amount of the material 22 is then stripped off the end of each such length 38.

At one of each such length 38, a clip 40 is formed (Fig. 5) on the exposed metal 20. The clip 40 may be formed by punching a hole in the metal 20 but leaving the punched-out metal partially attached to form a tongue.

Alternatively, the clip 40 may be in the form of a tongue of separate metal which is attached to the metal 20 by rivetting or adhesive or the like. The clip 40 is used to attach the channel to the lower end of the window channel 12 (Fig. 1) at the waist of the door.

At the other end of the length 38, a bracket 42 (Fig. 5) is attached to the exposed metal 20, again by rivetting or adhesive or the like. The bracket 42 may comprise an anchored nut 44 by means of which the bracket may be bolted to the door skin so that the lower end of the channel 14 is rigidly supported.

It will thus be seen that the channels 14 are produced as a combination of metal and plastics or rubber without the need for a separate manual assembly step.

The method also enables aluminium to be used as the metal, instead of mild steel or the like as previously, and this results in weight saving.

The cavity 26 provides added resilience to take up any dimensional inaccuracy in the position of the window channels as the window glass is raised and lowered.

CLAIMS

1. A window-sealing or guiding channel arrangement comprising a stiff metal channel having soft resilient material bonded to its inside surface, and means for rigidly mounting

the metal channel in a window glass receiving position.

2. An arrangement according to claim 1, in which the stiff metal channel is an unapertured channel of a light metal such as aluminium.

3. An arrangement according to claim 1 or 2, for mounting below the waist level of a vehicle body door, in which the metal channel carries at each of its ends mounting means for rigidly mounting it in position.

4. An arrangement according to claim 3, in which the mounting means at one of its ends is in the form of clip means for clipping the metal channel to a window channel above the waist level of the door, and the mounting means at the other end of the metal channel comprises a bracket for attaching that end of the channel to the vehicle door skin.

5. A method of making a window sealing and guiding arrangement, comprising the steps of forming a blank of unapertured metal into a shallow channel having a substantially flat base and sides each inclined upwardly therefrom at an obtuse angle thereto, extruding plastics or rubber material at least over the inside surface of the shallow channel so formed and over the distal edges of the sides thereof and so as to define integral longitudinal lips extending inwardly of the channel, applying flock or the like to the outer surfaces of lips and to at least a portion of the plastics or rubber material along the base of the channel, and bending the metal sides of the channel towards each other so as to bring each of them substantially into 90 degrees relationship with the base thereof.

6. A method according to claim 5, in which the extrusion step includes the step of completely covering the metal with the extruded plastics or rubber material.

7. A method according to claim 6, including the step of removing the plastics or rubber material from the outside of the base of the channel and the outside of each wall thereof except in the region of each distal edge.

8. A method according to any one of claims 5 to 7, including the step of extruding the plastics or rubber material so as to produce a hollow cavity running along the base of the channel.

9. A window sealing or guiding channel, substantially as described with reference to the accompanying drawings.

10. A method, substantially as described with reference to the accompanying drawings.